

1900/55 Fan Monitor and

Ideal for cooling towers and air

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Heat removal is one of the most common processes in an industrial plant. Process heat is most commonly removed by cooling towers and air cooled heat exchangers. Like any piece of rotating machinery, cooling tower and air cooled heat exchanger fans occasionally fail. However, a cooling fan failure can cost more than the expense of replacing it. A failed fan reduces cooling capacity, which reduces process throughput and plant profits.

Cooling systems today are often used at full capacity. In some plants, investments that improve efficiency also put greater demands on the cooling system. In others, the process demands more from the cooling system than originally anticipated, consuming spare capacity that was designed into the system. Sometimes, the cooling system is at full capacity because of overly optimistic projections of its thermal performance.

In plants where the cooling system is fully utilized, every fan is critical. The loss of even one can reduce plant capacity, which reduces process throughput and plant profits. Cooling tower and heat exchanger fan failures carry costs much higher than the hardware itself.

Listening to your concerns

You asked Bently Nevada for a better way to manage and protect your cooling tower and heat exchanger fans, and we have been listening. We are proud to announce a new fan vibration monitoring system for low speed fans — the 1900/55 Fan Monitor and the Velomitor CT (Cooling Tower) transducer. Both

were specifically designed to help solve your cooling tower and process heat exchanger fan vibration monitoring problems. Now, for about the same cost per point as a vibration switch, you can have a *truly effective* fan vibration monitoring system.

Advantages of a 1900/55 Fan Monitor System:

Rugged transducer: A reliable fan vibration monitoring system has two components: a transducer and a vibration monitor. Our new Velomitor CT Transducer can meet the unique demands of low speed fan monitoring. It withstands the harsh conditions inside a cooling tower, so it can be mounted on the fan gearbox. The fan gearbox is the best location for monitoring both fan and gearbox vibration.

Reliable monitor: The 1900/55 Fan Monitor periodically checks itself for proper operation, assuring system reliability. Its alarm setpoints are precise: they are adjusted in 2.54 mm/sec (0.1 in/s) increments, and they are easy to verify. The 1900/55 Fan Monitor also guards against two types of false alarms. False alarms caused by faulty transducer wiring are minimized by its Timed OK/Danger Defeat circuitry. False alarms caused by random transient events are greatly reduced by its alarm validation. Before initiating an alarm, the 1900/55 checks the vibration signal three times.

Safety: Cooling towers and heat exchangers can be dangerous areas to work in, especially in bad weather. The 1900/55 Fan Monitor can be mounted a safe distance away from the fan it monitors. All fan information, such as overall vibration levels, buffered transducer signals and alarm status, is available at that



Velomitor® CT Transducer

cooled heat exchanger applications

location. Consequently, operators and predictive maintenance personnel spend less time in dangerous areas.

Convenience: The 1900/55 Fan Monitor makes it easy to collect fan information. Its large liquid crystal display shows the current vibration level, alarm relay status and OK relay status. The buffered signal output on the front of the monitor provides convenient access to dynamic transducer data. Your PM/PPM technician will especially appreciate the permanently-installed Velomitor CT transducer, which makes temporary transducers unnecessary.

1900/55 Fan Monitor:

- Is a 4-channel monitor. It has one common alert relay, one common OK relay, and four individual danger relays. For flexibility, each channel has individual Alert and Danger set-points. The 4-channel configuration reduces installation costs.
- Can mount near the fan it monitors, in a weather proof enclosure with a large window for viewing the display. Mounting the monitor close to the fan helps keep wiring costs low.
- Has a large, clear Liquid Crystal Display (LCD) that shows information about the fan's condition. Display functions are easy to program. It can be programmed to scan channels automatically, or to display information from a selected channel.
- Performs a complete self-test on power up, and continually performs other tests. Users can initiate a self-test at any time to verify the monitor is functioning properly.

- Has buffered transducer outputs on its front panel and on a terminal connector behind its front panel.
- Has an ideal frequency response for fan monitoring, when used with the Velomitor CT transducer. When used with the Velomitor CT transducer, its frequency response is 1.5 to 1000 Hz (for shafts rotating at 90 to 60,000 rpm).

Velomitor CT transducer:

- Has a clean output signal and a frequency response ideal for monitoring fans. It is a piezo-velocity sensor, an accelerometer with an internal amplifier and integrator. Internal integration gives it a low-noise output in velocity units. It also has a scale factor of 4mV/(mm/s) [100 mv/(in/s)] peak and a broad frequency response of 1.5 to 1000 Hz.
- Is ruggedly constructed. Its case is made of durable, corrosion-resistant stainless steel. Its sensing element and electronics are encapsulated in epoxy resin to seal out moisture. It has a 10 metre (33 foot) integral cable, which increases reliability by eliminating the possibility of connector failures in the harsh fan environment. The Velomitor CT transducer has a stainless steel cap for connection to flexible conduit.
- Is inexpensive to install. It requires no extra components, such as special connectors or special enclosures.

The 1900/55 Fan Monitor and Velomitor CT transducer provide continuous monitoring to help you manage and protect the fans that are so important to your waste heat removal process. Contact your nearest Bently Nevada representative today for more information. ■

